Underground News

Providing information to the Water Well, UIC & Underground Hydrocarbon Storage industries in Kansas.

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HUTCHINSON SINKHOLE UPDATE by Mike Cochran, L.G.

In the Spring 2005 edition of the Underground News we described the sinkhole which developed January 3, 2005, near the BNSF mainline railroad tracks located in Southeast Hutchinson, Kansas. At that time the walls of the sinkhole were still falling into the sinkhole and the sinkhole was expanding north towards the railroad tracks. Efforts were being taken to protect the railroad. Since then, the responsible party for the sinkhole has taken action to stabilize the sinkhole walls, which includes gathering geologic data and the physical characteristics of the sinkhole by the use of slant borings, depth soundings and even a sonar survey. The information generated shows there is a void beneath the sinkhole. The sinkhole sidewall material and any material placed against the walls is sliding into this void. The responsible party and their consultants are filling the void so there is no place for the sinkhole wall material to move into, thus stabilizing the walls. This also allows material to be placed against the north sinkhole wall. The filling of the void was done using a conveyor system supported on barges floating on the water in the sinkhole. The soil was placed into the void through a large diameter metal pipe. The void filling operation was essentially completed in late July 2005. So far, these efforts seem to have worked.

Sinkhole Void Filling Operation

UNDERGROUND HYDROCARBON STORAGE UNIT (UHS) by Cina Poyer, L.G.

The regulatory deadline of April 1, 2006 for submitting final permit applications to the UHS is fast approaching. The UHS Unit has been working with the underground hydrocarbon storage well facilities to utilize the facility's existing spreadsheets and databases for individual storage wells to create Part II of the application. The ability to create Part II from the facility's database should save both time and labor costs and will also serve as a means for updating the testing and logging summaries for each well.

KDHE has added a new status of "plugging/monitoring" for underground storage wells. KDHE has asked facilities to place wells into monitoring status that are scheduled for plugging. Facilities will monitor the cavern pressure to collect data regarding cavern stabilization. KDHE will work with the underground hydrocarbon storage facilities to prepare a procedure for maintaining caverns that have been placed in plugging/monitoring status.

What's good about the UHS regulations? Facilities that have upgraded to supervisory control and data acquisition systems (SCADA) report they really like the monitoring and control capabilities provided by the SCADA system. Facilities that have installed the Coriolis meters are satisfied with the meter's efficiency and accuracy. The required sonar survey has allowed the facilities to more accurately assess the cavern's capacity and configuration. The required casing inspection logs are indicating that the casings are in better shape than anyone had guessed. Perhaps the most time saving regulation, for both the UHS Unit and the facilities, is K.A.R. 28-45-18 (b)(3)(D) that lists electronic mail as correspondence. Although the purpose of the UHS regulations is the protection of public health, safety, and the environment, the facilities are reporting they are pleased with both the monitoring/control capabilities of the newer electronic systems and the data they have gained from required logging and testing.

CITY OF HUTCHINSON INSTALLS DISPOSAL WELLS

by Kirk Hoeffner, L.G.

City of Hutchinson contractors recently completed two Class I disposal wells that were recently permitted by the KDHE Underground Injection Control (UIC) program. These wells are located next to Halstead Road just north of Highway 50 in Hutchinson. The Class I wells are part of a $40 million project involving the cleanup of chloride and solvent contamination in the groundwater.

A reverse osmosis (RO) treatment system was selected by the City of Hutchinson as the remediation option. The system will treat eight million gallons per day of contaminated groundwater to current drinking water standards for distribution to city residents. The RO treatment system uses pressure to push water through a porous membrane that traps larger molecules including the compounds causing contamination. Approximately two million gallons of wastewater per day will be generated from the RO system requiring disposal into the Class I wells. Due to the large volume of wastewater required for disposal and the restriction to "gravity" injection, the wells have been designed with 7-inch disposal tubing inside of 9 5/8-inch well casing to accommodate the flow. Disposal will be into the Arbuckle formation at depths between 3850 to 4700 feet below ground and at a rate of approximately 750 gallons per minute per well. A third well was also permitted and will be installed if the disposal capacity of the first two wells is exceeded.

Responsible parties associated with the contamination and the City of Hutchinson are paying for this unique treatment system which will ensure City of Hutchinson water users have a safe source of drinking water in the future. The RO system is planned for construction and operation in 2009. Until then, the Class I wells will receive untreated contaminated groundwater.

WEB SITE CHANGE...KDHE's new web site address is "http://www.kdheks.gov". This will not affect KDHE's present e-mail addresses.

Underground News

Kansas Department of Health & Environment

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GEOLOGY SECTION COMPLIANCE UPDATE:

- *The Water Well Program recently issued Revocation Orders to eleven licensed water well contractors. These orders revoked the contractor's license for failure to meet the licensing requirements.*
- *The UIC Program issued four Notices of Violation for Significant Noncompliance during January 1 through June 30, 2005. These included directing industrial waste to a septic system and annulus pressure below the minimum required for a Class I well. All of these violations were promptly resolved*

DOMESTIC LAWN AND GARDEN WATER WELLS ARE NOT IRRIGATION WELLS

by Richard Harper, L.G.

There has been some confusion regarding the difference between **domestic** use lawn and garden wells and **non-domestic** use irrigation wells in regards to the required minimum separation distance of the well from property lines. Kansas Administrative Regulation (K.A.R.) 28-30-2(h) defines Domestic Use as, "the use of water by any person or family unit or household for household purposes, or for the watering of livestock, poultry, farm and domestic animals used in operating a farm, or for the irrigation of lands not exceeding a total of two acres in area for the growing of gardens, orchards and lawns."

K.A.R. 28-30-8(d) states, "All wells shall be 25 feet or more from the nearest property line, allowing public right-of-ways to be counted; however, a well used only for irrigation or cooling purposes may be closer than 25 feet to an adjoining property where: such adjoining property is serviced by a sanitary sewer and does not contain a septic system, disposal well or other source of contamination or pollution; or the property to be provided with the proposed well is served by both a sanitary sewer and a public water supply."

A well is considered a domestic use irrigation well when it is used for the watering of gardens, orchards and lawns less than a total of two acres in area and is subject to the required minimum 25 foot setback from the property line. The problem is that water wells drilled for domestic lawn and garden use are sometimes located closer than 25 feet from an adjacent property line in violation of the regulations because the well is incorrectly interpreted by the landowner or water well contractor to be a non-domestic irrigation well. It is the intent of this regulation to provide additional protection to the lawn and garden well from contamination because of its significant potential to be used for drinking water purposes.

REGULATORY AGENDA by Mike Cochran, L.G.

The KDHE Geology Section is developing the following regulations:

Water Wells – As authorized by statute, Equus Beds Groundwater Management District #2 is adopting plugging and inactive well requirements through KDHE. The public hearing for the proposed regulations was held on June 14, 2005, at the GMD #2 Offices in Halstead, Kansas. The permanent regulations were published in the September 15, 2005 Kansas Register with an effective date of September 30, 2005.

UIC, Class III Injection Wells (Salt Solution Mining) – Modify existing regulations, including construction, testing, monitoring, permitting, reporting, operation and closure requirements and increase fees. Industry is still providing comments on the conceptual draft regulations. KDHE plans in the near future to place draft regulations into the internal concurrence process prior to commencing the official regulation adoption process.

UIC, Class V Injection Wells (Shallow) – Develop regulations clarifying prohibition of motor vehicle waste disposal wells and update definitions and inventory requirements. The common well types for motor vehicle waste and industrial waste disposal is a septic system or drywell. Outreach work has been completed and draft regulations are now undergoing KDHE internal concurrence prior to commencing the official regulation adoption process.

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On the Inside . . .

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Did you know ... Groundwater serves as a large subsurface reservoir. Of the total water on earth, 0.61% is groundwater while only 0.0091% is in rivers, streams and lakes.

United States Geological Survey

KANSAS DON'T SPOIL IT!

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